

**THE U.S. ARMY RESEARCH OFFICE  
BROAD AGENCY ANNOUNCEMENT  
DAAD19-03-R-0004  
FOR  
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA)  
ADVANCED TECHNOLOGY OFFICE (ATO)  
ODORTYPE DETECTION PROGRAM  
DECEMBER 2002**

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**Due Date for Receipt of Proposals:**

**Not Later Than January 29, 2003**

**All submittals are due by 4:00 p.m. local time on the above date**

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# **1. INTRODUCTION**

This is the U.S. Army Research Office (ARO) Broad Agency Announcement (BAA), DAAD19-03-R-0004, for the Defense Advanced Research Projects Agency (DARPA) Advanced Technology Office (ATO) Odortype Detection Program, issued under the provisions of paragraph 6.102(d)(2)(i) of the Federal Acquisition Regulation (FAR), which provides for competitive selection of research proposals. Contracts based on responses to this BAA are considered to be the result of full and open competition and in full compliance with the provisions of Public Law (PL) 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments.

## **1.1. APPROACH**

This BAA affords offerors the option of submitting proposals for the award of a Contract, Cooperative Agreement, Technology Investment Agreement, Grant, or Other Transaction. The type of research agreement is subject to negotiations.

## **1.2. OFFERORS**

The Government strongly encourages proposals from non-traditional defense contractors, nonprofit organizations, educational institutions, small businesses, small disadvantaged business concerns, and HBCU/MIs, as well as large businesses and Government laboratories (to include teaming arrangements between and among these groups). Government/National laboratory proposals may be subject to applicable direct competition limitations, though certain Federally Funded Research and Development Centers are excepted per P.L. 103-337 § 217 and P.L. 05-261 § 3136. Teaming is encouraged to the extent that it is beneficial and meaningful to the Government. Proposals from non-U.S. organizations will only be considered for Phase 1 and only for those proposals that are unclassified.

## **1.3. PROGRAM SCOPE AND FUNDING**

Subject to the terms and conditions of the FY03 DoD Appropriations Act, the Government anticipates award of multiple contracts/agreements; the total program funding for this research and development effort shall not exceed \$3,200,000 in FY03, \$3,700,000 in FY04, \$3,900,000 in FY05, \$7,600,000 in FY06, \$6,100,000 in FY07, and \$3,400,000 in FY08.

## **1.4. PERIOD OF PERFORMANCE**

The earliest anticipated award is planned to occur in March 2003. Proposals should be submitted for an initial effort to be completed within 15 months after award. Proposed efforts beyond the 15-month initial funding period should be costed as options, the first option being for 15 months, and then annually thereafter. The Government may incrementally fund any awards under this BAA. Any structure and period for exercise of options (if any) shall be negotiated as part of the award process.

## **1.5. TECHNICAL SUPPORT**

It is the intent of this office to use contractor support personnel in the review and evaluation of all submittals of this BAA. The Government intends to use employees of System Planning Corporation of Arlington, Virginia; Institute for Defense Analyses, a Federally Funded Research and Development Center located in Alexandria, VA; Adroit of Arlington, Virginia; and Logos Technologies, Inc. of Alexandria, Virginia to assist in administering the evaluation of the proposals and to provide advice regarding the technical content of the proposals to the Government evaluators. These personnel will have signed and be subject to the terms and conditions of non-disclosure agreements. By submission of its proposal, an offeror agrees that its proposal information may be disclosed to employees of these organizations for the limited purpose stated above. If you do not send notice of objection to this arrangement, we will assume your consent to use the subject personnel in review of your submittal(s) under this BAA. Only Government evaluators will make technical evaluations and award determinations under this BAA.

## **1.6. INSTRUCTIONS AND POINTS OF CONTACT**

This BAA Package may be electronically downloaded by referencing the BAA Number at:

<http://www.aro.army.mil/research/index.htm>

Questions regarding the technical content of this BAA may be submitted to DARPA at the following e-mail address: [odortypedetection@darpa.mil](mailto:odortypedetection@darpa.mil). Questions regarding the administrative content of the BAA may be addressed to the ARO voice mailbox number (919) 549-4375.

Updates to the BAA, including responses to questions or feedback, will be provided routinely at the above website location until the BAA deadline defined at the end of Section 2.1.

## 2. OVERVIEW OF ODORTYPE DETECTION PROGRAM

### 2.1. PROGRAM OVERVIEW

The DARPA ATO is soliciting innovative proposals to (1) determine whether genetically-determined odortypes can be used to identify specific individuals, and if so (2) to develop the science and enabling technology for detecting and identifying specific individuals by such odortypes.

The Odortype Detection program will leverage research that has demonstrated that the same set of genes that code for internal immune system self/non-self recognition in mice – the Major Histocompatibility Complex (MHC) – also code for individual odortype. Although experimental data for humans is far less quantitative, behavioral studies have yielded compelling results to suggest that such MHC-determined odor individuality can also be expected in humans. Recent experimental results with mice suggest that MHC-determined urinary odor is expressed as a mixture of volatile carboxylic acids occurring in relative concentrations that are characteristic of the odortype. This suggests the possibility of an exploitable chemosignal corresponding to an individual's genetically determined odortype.

This effort will be divided into two phases. The goal of phase 1 will be to determine whether an exploitable, robust signature corresponding to individual human odortype exists. At the end of 15 months, the program will need to characterize the MHC-determined chemosignal in human emanations (urine, sweat, etc) using chemical analysis such as GC/MS. Specifically, the following questions about human odortype should be addressed: (1) What are the MHC-determined volatiles? (2) How is individual odortype expressed? (e.g., is it the relative concentrations of the volatiles that define the uniqueness of the chemosignal?) (3) Does the chemosignal vary in a statistically significant manner among individuals? (4) What are the concentration levels of the volatiles in the emanations? (5) Are the patterns of volatiles the same for all types of emanations? At the end of 30 months, the impact of non-genetic factors (e.g., diet, health, stress, age) on the MHC-determined chemosignal must be understood. Specifically, chemical compounds resulting from non-genetic factors that impact the chemosignal must be identified. It is envisioned that this will involve experiments using both rodents and humans. The high degree of control that is possible with rodents will allow for a wide variety of experiments to be conducted that can then be used to guide the experiments with human samples.

The goal of phase 2 will be to build a detector that can reliably detect the signature identified in phase one with high sensitivity and specificity. Different detector approaches will be explored, including electronic noses and biological sensors. At the end of 42 months, the sensor(s) that demonstrate(s) sufficient sensitivity to those compounds identified in phase 1 will be selected for further investigation. Such investigation will focus on the confusers for each sensor and possible mitigation techniques. Possible sources of false alarms include the presence of various volatile chemicals in the natural background and may vary widely by location. The performance (including detection and false alarm rate) of each sensor will then be quantified. At the end of 54 months, the sensor(s) with the best sensitivity *and specificity* will be selected for field development and testing during the final year. The program goal is to have, at the end of 66 months, a detector that is at a level of development equivalent to that of a breadboard that can be validated in a relevant test environment. (This is known as a Technology Readiness Level, or TRL, of 5.)

Offerors can address both phase 1 and phase 2, or phase 1 only. It is possible that, depending on what proposals are submitted, a separate solicitation will be issued at a later date, focusing on the phase 2 effort. *Proposals that focus only on phase 2 will not be considered for this solicitation.* Offerors from non-U.S. organizations will be considered for phase 1 only, for proposals involving only unclassified work.

Full proposals are required not later than 1600 local time on January 29, 2003.

## **2.2. PROGRAM MILESTONE SCHEDULE**

The following milestones have been established by DARPA management as the means for determining whether sufficient progress is being made to warrant continued funding of the program.

<b><u>Milestone</u></b>	<b><u>Months After Program Kick-off</u></b>	<b><u>Event</u></b>
1	15	The unique chemosignal corresponding to MHC-determined human odortype must be characterized. Specifically, questions 1 through 5 described in Section 2.1 must be answered.
2	30	Chemical compounds resulting from non-genetic factors such as stress, diet, health, and age that impact the MHC-determined chemosignal must be identified.
3	42	Sensor(s) that demonstrate(s) sufficient sensitivity to compounds of interest will be selected. "Sufficient sensitivity" will be defined by the answers to the five questions addressed in Milestone 1.
4	54	Sensor(s) that demonstrate(s) the capability to identify target signatures with low false alarms will be selected.

These milestones were chosen in order to achieve the overall program goals within the desired timeframe for program completion. If an offeror wishes to deviate from these milestones, the proposal will still be considered as long as well-defined milestones are provided that demonstrate a clear path to the overall program goals.

## **3. GENERAL INFORMATION**

### **3.1. ELIGIBILITY**

To be eligible for award of a contract, an offeror must meet certain minimum standards pertaining to: financial resources, ability to comply with the performance schedule, prior record of performance, integrity, organization, experience, operational controls, technical skills, facilities, and equipment. (See FAR 9.104). Additionally, offerors proposing contracts must be registered in the Central Contractor Registration database IAW DFARS 204.73. Proposals from non-U.S. organizations will only be considered for phase 1 and only for those proposals that are unclassified. Non-U.S. citizens may perform under proposals involving only unclassified work.

### **3.2. LIMITATIONS ON OTHER TRANSACTION AUTHORITY**

Offerors are encouraged to propose the use of the most appropriate procurement vehicle, including Other Transactions. Per the direction of the Other Transaction Guide for Prototype Projects (USD(AT&L)), January 2001, offerors are advised that an Other Transaction will only be awarded if there is:

- A. at least one nontraditional defense contractor (see 3.4.1) participating to a significant extent in the prototype project, or
- B. no nontraditional defense contractor is participating to a significant extent in the prototype project, but at least one of the following circumstances exists:
  - at least one third of the total cost of the prototype project is to be paid out of funds provided by the parties to the transaction other than the federal Government. The cost share should generally consist of labor, materials, equipment, and facilities costs

(including allocable indirect costs).

- exceptional circumstances justify the use of a transaction that provides for innovative business arrangements or structures that would not be feasible or appropriate under a procurement contract.

Although use of one of these options is required to use an Other Transaction agreement as the research agreement, no single option is encouraged or desired over the others.

### **3.3. PROCUREMENT INTEGRITY, STANDARDS OF CONDUCT, ETHICAL CONSIDERATIONS**

Certain post-employment restrictions on former federal officers and employees may exist, including special Government employees (Section 207 of Title 18, United States Code). If a prospective offeror believes that a conflict of interest exists, the situation should be raised to DARPA at the e-mail address specified in Section 1.6 before time and effort are expended in preparing a proposal. All offerors and proposed subcontractors must therefore affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5.) must be disclosed. The disclosure shall include a description of the action the offeror has taken or proposes to take to avoid, neutralize, or mitigate such conflict.

### **3.4. DEFINITIONS**

#### **3.4.1. Nontraditional Defense Contractor**

A business unit that has not, for a period of at least one year prior to the date of the Other Transaction agreement, entered into or performed on (1) any procurement contract that is subject to full coverage under the cost accounting standards prescribed pursuant to section 26 of the Office of Federal Procurement Policy Act (41 U.S. C 422) and the regulations implementing such action; or (2) any other procurement contract in excess of \$500,000 to carry out prototype projects or to perform basic, applied, or advanced research projects for a federal agency.

#### **3.4.2. Small Business Concern**

A concern that is independently owned and operated, is not dominant in the field of operation in which it is bidding on Government contracts, and meets the size standards in FAR 19.102 (typically 500 or fewer employees, depending on SIC code).

#### **3.4.3. Small Disadvantaged Business Concern**

"Small disadvantaged business concern" as used in this part (except for 52.212-3(c)(2) and 52.219-1(b)(2) for general statistical purposes and 52.212-3(c)(9)(ii), 52.219-22(b)(2), and 52.219-23(a) for joint ventures under the price evaluation adjustment for small disadvantaged business concerns), means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to the acquisition; and either:

(1) Has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B; and

(i) No material change in disadvantaged ownership and control has occurred since its certification;

(ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(iii) It is identified, on the date of its representation, as a certified small disadvantaged business (SDB) concern in the database maintained by the Small Business Administration (PRO-Net); or

(2) For a prime contractor, it has submitted a completed application to the Small Business Administration or a private certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR part 124, subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since it submitted its application. In this case, a contractor must receive certification as an SDB by the SBA prior to contract award.

#### 3.4.4. HBCU/MI

Historically Black Colleges and Universities are described in Amendments to Title III, § 301 of P.L. 96-374 (20 U.S.C. 1061), Higher Education Act of 1965, and most recently amended December 20, 1993 in § 2(m) of P.L. 103-208. A minority institution is defined as an institution “whose enrollment of a single minority or a combination of minorities...exceeds 50 percent of total enrollment.” 20 USCA Section 1067k(3). See also 10 USCA Section 2323(c); 20 USCA Section 1131-1(c)(4); and 29 USCA Section 718(5)(b). See <http://www.ed.gov/offices/OCR/minorityinst.html>.

### 3.5. SUBMISSION HANDLING/RIGHTS IN TECHNICAL DATA AND COMPUTER SOFTWARE/PATENT RIGHTS - GENERAL

#### 3.5.1. Proposal Marking and Handling/Freedom of Information Act Requests

The Government intends to comply with procurement integrity statutes and regulation and DFARS 252.227-7016 in its treatment of information submitted in response to this BAA solicitation and marked with the individual or company’s legend (see paragraph 4.1.1 below). The offeror is cautioned, however, that portions of the proposal may be subject to release under terms of the Freedom of Information Act (FOIA), 5 U.S.C. 552, as amended. In accordance with FOIA regulations, the offeror will be afforded the opportunity to comment on, or object to, the release of proposal information.

#### 3.5.2. Statement of Limitations or Restrictions on Deliverable Items

As part of their proposal, offerors shall submit a statement of limitations or restrictions on the Government’s rights to use, release or disclose technical data or computer software **that is to be delivered** under a resulting award. *Technical data or computer software to be used by the offeror in performing the contract that will not be delivered to the Government need not be addressed.* Use of the following chart (pg. 8) from DFARS 252.227-7017(d) is recommended but not required. In any event offerors are requested to be as specific as possible in describing the data/software to be delivered and the rights in the technical data or software that the offeror proposes to deliver. Offerors’ attention is directed to paragraph 3.5.3 below.

Technical Data or Computer Software to be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(List)	(List)	(List)	(List)

#### 3.5.3. Rights in Technical Data and Computer Software

The Government will require at a minimum, some form of government-purpose license rights (see DFARS 252.227-7013) effective through January 1, 2015 for the technical data and computer software deliverables. If a license is required, specific terms of the license would be negotiated prior to award of a contract.

### 3.6. REPORT REQUIREMENTS

The number and types of reports will be specified in the award document. The reports shall be prepared and submitted in accordance with the procedures contained in the award document and mutually agreed on before award. A Final Report that summarizes the project and tasks is required at the conclusion of



the performance period for the award, notwithstanding the fact that the research may be continued under a follow-on vehicle. Monthly Technical Reports documenting Program and Financial Status will be required. Monthly Reports are expected to include financial status and a one-page summary of technical progress. In-depth Technical Reports will be required on a quarterly basis. Briefings presented at biannual Principal Investigator Meetings will satisfy two out of four quarterly reports each program year. Technical documentation accompanying milestone deliverables is also required. In addition, any Test Plans, Test and Technical Reports, Technical Data, Specifications, computer programs or other data, as appropriate, should be specified based on the proposed efforts.

### **3.7. REQUIRED REVIEW AND INTERCHANGE MEETINGS**

Awardees under this BAA will be required to present an overview of their proposed work at the Program Kick-off Meeting. In addition, attendance at biannual Principal Investigator Meetings will be required. The purpose of these two- or three- day meetings is to facilitate an open exchange among the research teams. DARPA believes that this open interchange will result in a higher probability of success in achieving the overall program objectives.

### **3.8. SUBCONTRACTING**

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as subcontractors to contractors performing work or rendering services as prime contractors or subcontractors under Government contracts, and to assure that prime contractors and subcontractors carry out this policy. Each offeror who submits a contract proposal and includes subcontractors is required to submit a subcontracting plan IAW FAR 19.702(a)(1) and (2) should do so with their proposal. The plan format is outlined in FAR 19.704. Proposals including non-U.S. organizations will only be considered for Phase 1 and only for those proposals that are unclassified.

### **3.9. USE OF HUMAN SUBJECTS AND LABORATORY ANIMALS**

Awardees under this BAA must comply with applicable provisions of national policies concerning research involving the use of live organisms.

#### **3.9.1. Human Subjects**

For human subjects, the provisions include the Common Federal Policy for the Protection of Human Subjects codified by the Department of Health and Human Services at 45 CFR part 46 and implemented by the Department of Defense at 32 CFR part 219.

#### **3.9.2. Animals**

For animals, the provisions include rules on animal acquisition, transport, care, handling, and use in: (i) 9 CFR parts 1-4, Department of Agriculture rules that implement the Laboratory Animal Welfare Action of 1966 (U.S.C. 2131-2156); and (ii) the "Guide for the Care and Use of Laboratory Animals," National Institutes of Health Publication No. 86-23.

## **4. PROPOSAL PREPARATION**

This section is intended to provide information needed by the scientist/engineer preparing the proposal to prepare research proposals for submission. Both prospective principal investigators and business office personnel will find it useful. Organizations or individuals interested in submitting research proposals are encouraged to make preliminary inquiries on the general need for the type of research effort contemplated before expending extensive time and effort in preparing a detailed research proposal. Technical inquiries should be made to DARPA at the e-mail address specified in Section 1.6 of this BAA.

### **4.1. GENERAL GUIDANCE**

All submittals must follow the instructions in this announcement and include only the information requested to avoid delays in evaluation or disqualification.

#### **4.1.1. Restrictive Markings on Proposals**

All proposals should clearly indicate limitations on the disclosure of their contents. They may be marked as "Proprietary" or words to that effect. Markings like "Company Confidential" or other phrases that may be confused with national security classifications shall be avoided.

#### **4.1.2. Proposal Format**

Proposals must be in English. Five sets of the full proposal plus one set in electronic format shall be submitted to DARPA. Each submittal shall reference BAA DAAD19-03-R-0004. These proposals shall be on single-sided pages, font no smaller than 12 point, and 1-inch margins left/right/top/bottom. A page is defined as being no larger than 8.5" x 11.0"; accordion-style fold-outs will be counted as multiple pages equivalent to the expanded size. Proposals shall be stapled or submitted in loose-leaf binder, not bound. Electronic copy shall be on IBM PC-formatted CD-ROM in a format readable by Microsoft Office 1997.

#### **4.1.3. Confidentiality**

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. The original of each proposal received will be retained at DARPA and all other copies destroyed. Destruction certification can be requested and received provided a formal request is received at DARPA within 5 days after successful or unsuccessful notification.

#### **4.1.4. Proposal Submission**

Proposals must be received not later than 1600 local time on January 29, 2003. Proposals must be submitted to the DARPA mailing address identified in this BAA. Proposals must be submitted in hard copy, with one original and four copies, plus one electronic copy on CD-ROM. Facsimile or electronic submissions will not be accepted.

Proposals submitted under this BAA may either be mailed or hand-delivered.

Mailing address: Defense Advanced Research Projects Agency  
ATTN: DARPA ATO (DAAD19-03-R-0004)  
3701 North Fairfax Drive  
Arlington, VA 22203-1714

For hand deliveries, the courier shall deliver the package to the DARPA Visitor Control Center at the address specified above. The outer package, as well as the cover page of the proposal, must be marked "Odortype Detection BAA DAAD19-03-R-0004."

Proposals received after the deadline will be handled in accordance with the provisions detailed in Appendix A.

### **4.2. VOLUME I - TECHNICAL AND MANAGEMENT PROPOSAL**

The technical portion shall include an Executive Summary, a technical approach, description of relevant prior work, a program plan (including a statement of work), a facilities and equipment description, list of documentation and reports, and management plans. The statement of work should indicate the effort intended for the period of performance. All paragraphs containing proprietary information must be clearly marked.

#### **4.2.1. Format**

Volume I, Technical and Management Proposal, may include an attached bibliography of relevant technical papers or research notes (published and unpublished), which document the technical ideas and approach(s) upon which the proposal is based. Copies of not more than three (3) relevant papers can be included with the submission. The bibliography and attached papers are not included in the page counts given below. The submission of other supporting materials along with the proposal is strongly discouraged, and they will not be considered for review. Except for the attached bibliography and Table of Contents, Volume I shall not exceed forty-seven (47) pages. Maximum page lengths for Sections B, C, and D are shown in braces {} below. Maximum page limits for each subsection are also indicated in braces. Section A includes a Table of Contents, which has no page limit. Offerors must submit an origi-

nal and four (4) hard copies of the proposals and an electronic copy on CD-ROM. All pages in excess of the specified page limit for each subsection will be pulled from the proposal and not considered in the evaluation.

#### **4.2.2. Section A – Administrative**

Cover sheet to include: {1 page}

- (1) BAA number.
- (2) Lead Organization Submitting proposal.
- (3) Type of business, selected among the following categories: "Large Business," "Small Disadvantaged Business," "Other Small Business," "HBCU," "MI," "Other Educational," or "Other Nonprofit."
- (4) Contractor's reference number (if any).
- (5) Other team members (if applicable) and type of business for each;
- (6) Proposal title.
- (7) Technical point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available).
- (8) Administrative point of contact to include: salutation, last name, first name, street address, city, state, zip code, telephone, fax (if available), electronic mail (if available).

Official transmittal letter {1 page}

Table of Contents {no page limit}

#### **4.2.3. Section B – Summary of the Proposal {6}**

This section provides a brief overview of the proposed work. Further elaboration will be provided in Section C.

##### **4.2.3.1. Executive Summary {1}**

A title and an abstract that includes a concise statement of work and basic approaches to be used. This should be on a separate page and in a form suitable for release under the Freedom of Information Act, 5 U.S.C. 552, as amended.

##### **4.2.3.2. Summary Of Innovative Claims For The Proposed Research {1}**

This subsection should succinctly describe the uniqueness and benefits of the proposed approach relative to the current state-of-art and alternative approaches.

##### **4.2.3.3. Summary of Technical Approach {1}**

The technical rationale, technical approach, and constructive plan for accomplishments of technical goals in support of innovative claims and deliverable production should be summarized.

##### **4.2.3.4. Summary of Deliverables {1}**

Products, transferable technology, and deliverables associated with the proposed research should be summarized. Deliverables can include quantitative data that address specific questions or issues.

Deliverables should be defined that show progress toward the program milestones. Deliverables will be specified at 6-month intervals.

##### **4.2.3.5. Summary of Cost, Schedule, and Milestones {1}**

Summarize, in table form, cost, schedule, and milestones for the proposed research, including estimates of cost for each deliverable and total cost.

##### **4.2.3.6. Summary of Approach to Intellectual Property {1}**

Describe proposed approach to intellectual property rights, together with supporting rationale of why this approach offers the best value to the Government. This section should list technical data, computer software, or computer software documentation to be provided at the end of the effort with other than unlimited rights in accordance with DFARS Clause 252.227-7017 IDENTIFICATION AND ASSERTION

OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUNE 1995).

#### **4.2.4. Section C — Detailed Technical Summary {28}**

This section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and benefit of the proposed work that make it desirable to DARPA.

##### **4.2.4.1. Statement of Work {3}**

Statement of Work (SOW) written in plain English, outlining the scope of the effort and citing specific tasks to be performed and specific contractor requirements.

##### **4.2.4.1.1. Summary of Technical Approach {12}**

Technical rationale, technical approach, and constructive plan for accomplishment of technical goals in support of innovative claims and deliverable production.

##### **4.2.4.1.2. Detailed Description of Deliverables {4}**

Products, transferable technology, and deliverables associated with the proposed research should be described. Deliverables can include quantitative data that address specific questions or issues. Well thought-out deliverables that define a clear path toward program milestones are a very important element of the proposal. Deliverables will be specified at 6-month intervals.

##### **4.2.4.1.3. Technology Transition {2}**

Any plans and capability to accomplish any technology transition and commercialization should be described. Summarize in this subsection all proprietary claims to results, prototypes, intellectual property, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are no proprietary claims, this should be stated.

##### **4.2.4.1.4. Related Research {2}**

Compare the proposed effort with other ongoing research in this area. Describe the advantages and disadvantages of the proposed effort in comparison with other relevant research.

##### **4.2.4.1.5. Previous Accomplishments {3}**

Discuss the offeror's previous accomplishments and work in this or closely related research areas.

##### **4.2.4.1.6. Facilities {2}**

Describe the facilities that would be used for the proposed effort for the work area.

#### **4.2.5. Section D — Other Proposal Common Information {11}**

This section contains information common to the proposal as a whole. There should be one Section D per proposal.

##### **4.2.5.1. Team {8}**

The offering team should define both the organizations and the individuals within those organizations that make up the team, including expected duties, relevant capabilities and task responsibilities of team members, and expected relationships among members. Non-U.S. citizen team members may only perform under proposals involving only unclassified work. A description of the technical, administrative, and business structure of the team and the internal communications plan should be included. Project/function/subcontractor relationships, technology transition plans, government research interfaces, and planning, scheduling, and control practices should be described. The team leadership structure should be defined.

Provide a brief biography of the key personnel (including alternatives, if desired) who will be involved in the research along with the amount of effort to be expended by each person during the year. Documentation of previous work or experience in the field of the offeror is especially important.

Indicate if the team organization has extensive Governmental contracting experience.

Detailed support enhancing this section including formal teaming arrangements required to execute this program should be provided.

#### **4.2.5.2. Resource Share {1}**

The type of support, if any, the offeror might request from the Government, such as facilities, equipment, or materials.

#### **4.2.5.3. Agency Involvement {1}**

The names of other federal, state, or local agencies or other parties receiving the proposal and/or funding the proposed effort. If none, so state.

#### **4.2.5.4. Environmental {1}**

A statement regarding possible impact, if any, of the proposal's effect on the environment IAW applicable statutory and regulatory guidance.

#### **4.2.6. Section E – Additional Information**

A brief bibliography of relevant technical papers and research notes (published or unpublished) which documents the technical ideas upon which the proposal is based. Copies of not more than three (3) relevant papers may be included in the submission.

### **4.3. VOLUME II – FINANCIAL/CONTRACTUAL {NO PAGE LIMIT}**

#### **4.3.1. Cover sheet**

A cover sheet to include:

- (1) Name and address of offeror (*include zip code*).
- (2) Name, title, and telephone number of offeror's point of contact.
- (3) Award instrument desired – cost-plus-fixed-fee (CPFF) contract, cost-contract--no fee, cost sharing contract--no fee, other type of procurement contract, grant, cooperative agreement, other transaction (*specify*).
- (4) Place(s) and period(s) of performance.
- (5) Total proposed cost separated by basic award and option(s) (if any).
- (6) Name, address, and telephone number of the offeror's cognizant Defense Contract Management Agency (DCMA) or other administration office (*if known*).
- (7) Name, address, and telephone number of the offeror's cognizant Defense Contract Audit Agency (DCAA) or other audit office (*if known*);
- (8) Cage Code (*if known*),
- (10) DUN's # (*if known*),
- (11) SIC # (*if known*),
- (12) TIN#. (*if known*).

#### **4.3.2. Cost Response**

The objective of the cost response is to provide sufficient cost information to substantiate that your proposed cost is realistic, reasonable, and complete for the proposed work. Accordingly, offerors may tailor the format to reflect the proposed vehicle, internal business practices, and accounting procedures as needed. Offerors shall provide data sufficient to establish price reasonableness, such as commercial pricing data, parametric data, or cost information. Certified cost or pricing data will only be requested of a large business contractor if the proposed contract exceeds the Truth in Negotiation Act threshold. Cost breakdown shall include materials, direct labor, other direct costs such as special test equipment or travel, and indirect costs. Offerors shall provide exhibits as necessary to substantiate the cost elements.

#### **4.3.3. Cost Breakdown**

A cost-element breakdown should be provided for the first 15 months of Phase 1 and the second 15 months of Phase 1. Proposals for both Phase 1 and Phase 2 should additionally provide an annual cost-element breakdown for Phase 2. The cost-element breakdown must reflect all specific requirements. Supporting breakdowns must be furnished for each cost element, consistent with the offeror's accounting system. A clear correspondence between each task identified in the Statement of Work in Volume I, Section C and a cost element must exist. When more than one contract line item is proposed, summary total amounts covering all line items must be furnished for each cost element and each Government Fiscal Year. If agreement has been reached with Government representatives on the use of forward pricing rates/factors, identify the agreement, include a copy, and describe its nature. Depending on the offeror's system, breakdowns shall be provided for the following basic elements of cost, as applicable.

#### **4.3.4. Materials**

Provide a consolidated price summary of individual material quantities included in the various tasks, orders, or contract line items being proposed and the basis for pricing (vendor quotes, invoice prices, etc.). Include new materials, parts, components, assemblies, and services to be produced or performed by others. For all items proposed, identify the item and show the source, quantity, and price.

#### **4.3.5. Established Catalog or Market Prices/Prices Set By Law or Regulation**

When an exemption from the requirement to submit cost or pricing data is claimed, whether the item was produced by others or by the offeror, provide justification for the exemption.

#### **4.3.6. Direct Labor**

Provide a list of participants showing a time phased (e.g., monthly, quarterly) breakdown of labor hours, rates, and cost by appropriate category, and furnish basis for estimates. *Key personnel must be listed by name.*

#### **4.3.7. Indirect Costs**

Indicate how offeror has computed and applied offeror's indirect costs, including cost breakdowns, and show trends and budgetary data to provide a basis for evaluating the reasonableness of proposed rates. Indicate the rates used and provide an appropriate explanation.

#### **4.3.8. Other Costs**

List all other costs not otherwise included in the categories described above (e.g., special tooling; travel, including travel for required review and interchange meetings specified in Section 3.7.; computer and consultant services; preservation, packaging and packing; spoilage and rework; federal excise tax on finished articles) and provide basis for pricing.

#### **4.3.9. Competitive Methods**

For those acquisitions (e.g., subcontract, purchase orders, material orders) over \$100,000.00 priced on a competitive basis, also provide data showing degree of competition and the basis for establishing the source and reasonableness of price. For inter-organizational transfers priced at other than cost of the comparable competitive commercial work of the division, subsidiary, or affiliate of the contractor, explain the pricing method (See FAR 31.205-26(e)).

#### **4.3.10. Noncompetitive Methods**

For those acquisitions (e.g., subcontract, purchase orders, material orders) over \$500,000.00 priced on a noncompetitive basis, also provide data showing the basis for establishing source and reasonableness of price. For standard commercial items fabricated by the offeror that are generally stocked in inventory, provide a separate cost breakdown if price is based on cost. For inter-organizational transfers priced at cost, provide a separate breakdown of cost by elements.

#### **4.3.11. Royalties**

If more than \$250.00, provide the following information on a separate page for each separate royalty or license fee:

- Name And Address of Licensor
- Date of the License Agreement
- Patent Numbers, Patent Application Serial Numbers, or other basis on which the royalty is payable
- Brief description (including any part or model numbers of each contract item or component on which the royalty is payable)
  - Percentage or dollar rate of royalty per unit
  - Unit price of contract item
  - Number of units
  - Total dollar amount of royalties

Note: A copy of the current license agreement and identification of applicable claims of specific patents may be specifically requested by the contracting officer. (See FAR 27.204 and 31.205-37.)

#### **4.3.12. Facilities Capital Cost of Money**

When the offeror elects to claim facilities capital cost of money as an allowable cost, the offeror should submit Form CASB-CMF and show the calculation of the proposed amount. (See FAR 31.205-10.)

#### **4.3.13. Fee**

The fee, if any, which the organization proposes.

#### **4.3.14. Past Performance**

Each offeror should submit a document that describes their relevant past performance, including both Government and commercial contracts/agreements. Relevant contracts/agreements may include data performed by other divisions, corporate management, critical subcontractors, or teaming subcontracts if these resources will be used on the subject effort. The following data from current or past efforts should be provided (to the extent applicable):

- Company/Division Name
- Program title as listed on the contract
- Contracting Agency
- Contract Number
- A brief description of the contract effort
- Period of performance
- Original Contract Dollar Value and Current/Final Contract Dollar Value
- Original Completion Date and Current/Final Completion Date
- Name, address and telephone number of the customer's Program Manager, Chief Engineer

and Contracting Officer

Offerors are expected to explain what aspects of the contracts are relevant to the subject Odortypes program in terms of achieving desired product performance, cost and schedule performance and risk reduction. The offeror can also submit information that explains past problems and how they have been overcome.

#### **4.3.15. Representations and Certifications**

Offerors should submit the applicable representations and certifications at <http://www.aro.army.mil/forms/forms.htm> as follows: ARO Form 53 – Representations and Certifications (For industrial/commercial organizations only) or ARO Form 95 – Certifications for Educational/Nonprofit Institutions.

## **5. PROPOSAL EVALUATION**

### **5.1. OBJECTIVE**

The objective of the Odortype Detection Program is to determine whether genetically-determined odortypes can be used to identify specific individuals, and if so to develop the science and enabling technology for detecting and identifying specific individuals by such odortypes. The criteria to be used in evaluating and selecting proposals are listed below:

### **5.2. EVALUATION CRITERIA**

The criteria to be used to evaluate and select proposals for this project are described in the following paragraphs. Each proposal will be evaluated on the merit and relevance of the specific proposal as it relates to the program rather than against other proposals for research in the same general area. Agency evaluators will consider technical factors (Basic Requirement and the Technical Performance criteria) as more important than non-technical factors (Past Performance, Schedule, and Cost). In accordance with FAR 35.016(e) the primary basis for selecting proposals for award shall be technical, importance to agency programs, and fund availability.

#### **5.2.1. Basic Requirement**

The proposed solution meets the letter and intent of the stated requirement and all elements within the proposal exhibit a comprehensive understanding of the problem. The offeror clearly addresses how the proposed effort will meet and progressively demonstrate the goals of the Odortype Program. The proposed solution meets multiple DARPA or user (either U.S. Government or commercial) needs and is conclusive with compliance and justification of required elements in the solicitation.

#### **5.2.2. Technical Performance**

The proposed technical approach is feasible, achievable, complete and supported by a proposed technical team that has the expertise and experience to accomplish the proposed tasks. Task descriptions and associated technical elements provided are complete and in a logical sequence with all proposed deliverables clearly defined such that a final product that achieves the requirement can be expected as a result of award. The proposal identifies all technical risks and planned mitigation efforts are clearly defined and feasible. The roles of the prime and other participants required are clearly distinguished and pre-coordination with all participants (including Government facilities) fully documented. Management plans must demonstrate: superior Government visibility into and interaction with key technical activities and personnel, and, single point of responsibility for agreement performances. The requirement for and the anticipated use or integration of Government Furnished Property (GFP) including all equipment, facilities, information, etc. is fully described including dates when such GFP will be required. Intellectual property ownership and the planned transition to production are adequately addressed, including a support concept for product described. Similar efforts completed by the offeror in this area are fully described including identification of other Government sponsors.

#### **5.2.3. Offeror's Past Performance**



The offeror's past performance in similar efforts clearly demonstrates an ability to deliver products that meet the proposed technical performance requirements within the proposed budget and schedule. The proposed project team has the expertise to manage the cost and schedule.

#### **5.2.4. Schedule**

The offeror clearly addresses how the proposed effort will meet and progressively demonstrate the goals of the program. The proposed schedule is complete and achievable. The proposal indicates that the offeror has fully analyzed the project's critical path and has addressed the resulting schedule risks.

#### **5.2.5. Cost**

The proposed costs are reasonable for the work proposed, realistic, and affordable. Estimates are "realistic" when they are neither excessive nor insufficient for the effort to be accomplished. The proposal documents all anticipated costs including those of associate, participating organizations. The proposal demonstrates that the offeror has fully analyzed budget requirements and addressed resulting cost risks. All leveraging opportunities have been explored and identified. Other sponsors who have funded or are funding this offeror for the same or similar efforts are identified. The Government shall evaluate how well all cost data is traceable and reconcilable.

**\*NOTE: OFFERORS ARE CAUTIONED THAT EVALUATION SCORES MAY BE LOWERED AND/OR PROPOSALS REJECTED SHOULD SUBMITTAL INSTRUCTIONS NOT BE FOLLOWED**

## **6. NOTIFICATION TO OFFERORS**

### **6.1. PROPOSALS**

Proposals not accepted will be destroyed; however, one copy of non-accepted proposals will be retained and filed. Those proposals retained may be considered for funding for up to twelve months. Proposals identified for funding may result in a procurement contract, depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. Per negotiations, portions of resulting awards may be segregated into pre-priced options.

### **6.2. NOTIFICATION OF INTENT TO AWARD**

When the Government concludes technical evaluations and transitions to formal negotiations, notification of acceptance or rejection of proposals will be sent via mail. It should generally be assumed that the reason a full proposal was not considered negotiable was that it did not fit the needs of the DARPA ATO, that it exceeded cost thresholds, or that it failed to meet crucial requirements as specified for technical evaluation. Telephonic inquiries concerning the status prior to official notification will not be accepted.

## **APPENDIX A: LATE SUBMISSIONS AND WITHDRAWALS OF PROPOSALS**

- (a) Offerors are responsible for submitting proposals so as to reach the Government office designated in the solicitation by the time specified in this BAA.
- (b) Any proposal received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless there is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers.
- (c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.
- (d) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.
- (e) Proposals may be withdrawn by written notice received at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.